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Zachary T Wobensmith III
7746 101st Court
Vero Beach, FL 32967-2871

EXAMINER
WEINER, LAURA S

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/534,313
Filing Date: May 09, 2005
Appellant(s): KEJHA ET AL.

Zachary T. Wobensmith, III
7746 101st Court
Vero Beach, FL 32967-2871
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 5, 2008 appealing from the Office action mailed December 12, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims 1-6 and 10 appears on page 1-2 of the Appendix to the appellant's brief. The minor errors are as follows: Claim 4, c. should claim $LiCoO_2$ instead of $LiCo0_2$.

(8) Evidence Relied Upon

6,468,695	BARKER	10-2002
WO 01/13443	BARKER	02-2001
5,928,812	XUE	07-1999
6,022,641	ENDO et al.	02-2000
2002/0119375	ZHANG	08-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-6, 10 are rejected under 35 U.S.C. 102(b) / (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Barker (WO 01/13443)/ (6, 468,695).

Barker ('695) teaches on page 9, lines 21-49, a cathode electrode comprising 72.6 LMO, 0.3 lithium carbonate (Li2CO3) additive, 3.0 carbon, 7.5 binder and 16.7 plasticizer. Barker teaches that the carbon was Super P carbon and the binder was Kynar Flex 2801 binder (PVDF-HFP). Barker teaches in column 8, lines 1-4, that LiMn2O4 (LMO), LiCoO2 or LiNiO2 can be used.

Since Barker teaches the same cathode material comprising LiCoO2, the same Li2CO3 additive, Super P carbon, PVDF-HFP and a plasticizer then inherently the same cathode would contain an additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of a cathode containing an additive which reduces or eliminates initial irreversible capacity loss of said cells would have obviously have been present once the Barker product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Claims 1-3, 5-6, 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Xue (5,928,812).

Xue teaches in column 8, a cathode comprising 64.7 wt% of LiMn2O4, 2.0% Li2CO3, 12.2 wt% PVDF-HFP, 5 wt% carbon black and 16.1 wt% plasticizer.

Since Xue teaches a lithiated cathode material and the same Li2CO3 additive then inherently the additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of an additive reducing or eliminating initial irreversible capacity loss of said cells would have obviously have been present once the Xue product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Claims 1-3, 5-6, 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Endo et al. (6,022,641).

Endo et al. teaches in column 2, incorporating a specific amount of an alkali metal carbonate 0.5-20% by weight into the cathode comprising manganese oxide or lithium-manganese complex oxide is known. Endo et al. teaches in columns 7-8,

Examples 1-4, a cathode comprising lithium-manganese composite oxide, Li2CO3, a conductive graphite material, a binder of polyvinylidene fluoride and dimethylformamide.

Since Endo et al. teaches a lithiated cathode material and the same Li2CO3 additive then inherently the same additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of an additive reducing or eliminating initial irreversible capacity loss of said cells would have obviously have been present once the Endo et al. product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Claims 1-3, 5-6 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Zhang (US 2002/0119375).

Zhang teaches on page 4, Example II, a cathode comprising LiCoO2 treated with various amounts of LiBO2. Example II, teaches having amounts of 0.1 wt% LiBO2 and 0.15 wt% LiBO2.

Since Zhang teaches the same cathode material comprising LiCoO2 and a lithium compound additive then inherently the same additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of a cathode containing an additive which reduces or eliminates initial irreversible capacity loss of said cells would have obviously have been present once the Zhang product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

(10) Response to Argument

Argument 1: There is no recognition in the four patents that have been cited against the claims of the formation of a passivation layer on the anode surface upon the initial charging cycling which causes an irreversible capacity loss, nor would using the teachings of the patents eliminate the irreversible capacity loss.

Firstly, there is no mention of "forming or not forming a passivation layer on the anode" in any of the claims, therefore this argument does seem to have merit.

Secondly, claims 1-6 are drawn to a cathode composition and not to a battery/cell therefore the intended use concern that the additive reduces or eliminates initial irreversible capacity loss of the cell cited in claim 1 would not result for these claims. In addition, a cathode does not comprise an anode so there would be or not be any passivation layer formed. This limitation is an intended use.

Thirdly, claim 10 is drawn to a lithium-ion cell but the claim does not state the material of the anode therefore the intended concern that "the additive reduces or eliminates initial irreversible capacity loss of the cell" cited in claim 1 or the argument that there would be or not be any passivation layer formed on the anode would not occur because the specification teaches a carbon anode would have these issues.

Argument 2: There is no recognition that Barker patent is concerned with the formation of a passivation layer on the anode surface upon the initial charging cycling which causes an irreversible capacity loss, nor would using the teachings of the Barker patent eliminate the irreversible capacity loss.

The Examiner disagrees because since Barker teaches the exact same cathode composition as cited in claim 4 comprising LiCoO2, the same Li2CO3 additive cited in claims 2 and 4 present in the claimed range cited in claim 3, Super P carbon, PVDF-HFP and a plasticizer then inherently the same cathode would contain an additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of a cathode containing an additive which reduces or eliminates initial irreversible capacity loss of said cells would have obviously have been present once the Barker product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Argument 3: There is no recognition that Xue patent is concerned with the formation of a passivation layer on the anode surface upon the initial charging cycling which causes an irreversible capacity loss, nor would using the teachings of the Xue patent eliminate the irreversible capacity loss.

The Examiner disagrees because since Xue teaches a cathode comprising a lithiated cathode material, the exact same Li2CO3 additive cited in claims 2 and 4 present in the claimed range cited in claim 3, PVDF-HFP, a carbon material, carbon black and a plasticizer, then inherently the cathode comprising an additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of an additive reducing or eliminating initial irreversible capacity loss of said cells would have obviously have been present once the Xue product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Argument 4: The Endo et al. patent does teach using an additive that reduces or eliminates initial irreversible capacity loss of the cells.

Endo et al. teaches in column 2, incorporating a specific amount of an alkali metal carbonate 0.5-20% by weight into the cathode comprising manganese oxide or lithium-manganese complex oxide is known. Endo et al. teaches a cathode comprising a lithium-manganese composite oxide and a Li2CO3.

Since Endo et al. teaches a lithiated cathode material and the exact same Li2CO3 additive cited in claims 4-5, then inherently the same additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of an additive reducing or eliminating initial irreversible capacity loss of said cells would have obviously have been present once the Endo et al. product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

Argument 5: There is no recognition that Zhang patent is concerned with the formation of a passivation layer on the anode surface upon the initial charging cycling which causes an irreversible capacity loss, nor would using the teachings of the Zhang patent eliminate the irreversible capacity loss.

The Examiner disagrees because since Zhang teaches the same cathode material comprising LiCoO2 and one of the specified lithium compound additive, LiBO2 (lithium borate) cited in claim 2 in the claimed amount cited in claim 3, then inherently the same additive which reduces or eliminates initial irreversible capacity loss of said cells must also be obtained.

In addition, the presently claimed property of a cathode containing an additive which reduces or eliminates initial irreversible capacity loss of said cells would have obviously have been present once the Zhang product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Laura S Weiner/
Primary Examiner, Art Unit 1795

Conferees:

Patrick Ryan, SPE 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795

William Krynski, Quality Assurance Specialist, TC 1700

/William Krynski/